Abstract

A switching power supply circuit ready for a wide range and including a power factor improving function is disclosed which can achieve reduction in cost, reduction in size and weight of the circuit and reduction of the power loss by reducing the number of converter sections with respect to the number of stages in a starting order of secondary side DC output voltages.

A plurality of switching converters (101), (102) are of the composite resonance type wherein a partial resonance voltage circuit is combined with a switching converter of the current resonance type according to a half-bridge connection system.

Changeover control is performed such that a rectification circuit serves as a voltage doubler rectification circuit at an AC voltage equal to or lower than 150 V, but serves as a full-wave rectification circuit at another AC voltage equal to or higher than 150 V.

Power factor improvement is implemented by feeding back the voltages of outputs of the converters to a rectification current path by a power factor improving transformer (VFT) and interrupting the rectification current by means of a rectification diode to expand the

conduction angle of the AC input current.

Starting order control of the secondary side DC output voltages is performed by changing over a DC switch circuit (6) inserted in the rectification current path between on and off in response to inputting of a predetermined starting signal.